CLAIM 6 IS REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON FUNK ET AL. U.S. PATENT NO. 6,148,239 (HEREINAFTER FUNK)

In the third enumerated paragraph of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to "perform various processes in various sequences" to arrive at the claimed invention. This rejection is respectfully traversed.

In the statement of the rejection, the Examiner referred to column 2, lines 38-60 and column 11, lines 12-25 of Funk as teaching certain elements of the claimed invention. For ease of reference, Applicant has reproduced below the Examiner's second citation to Funk of column 11, lines 12-25:

> The material may be etched in multiple etching chambers using different etch processes such as wet etch operations and plasma etch operations using a variety of etching chemistries. The multiple chambers may further have different performance characteristics. FICD measurements are highly useful for determining characteristics and performance of the process that are substantially relevant to the performance characteristics, such as electrical characteristics and operating speed, of the ultimate fabricated parts.
>
> In one embodiment, the feed forward operation 316 includes an analysis of the FICD to determine the control adjustments forwarded in the process. The result steps maintain a running count of the measured FICD values for each material thread.

Claim 6 recites that a dry etching of a predetermined film is performed prior to wet etching of the predetermined film. Claim 6 also recites that after dry etching, acquiring the dimension of the film to be processed and determining processing requirements of the wet etching based on the acquired dimension. Therefore, Applicant has claimed:

(a) a specific set of steps

(b) a specific order in which these steps are performed, and

(c) a specific variable that is to be acquired and later used to determine processing requirements of a subsequent processing step

The Examiner has, at best, produced a reference that discloses using a feed forward control mechanism with regard to the manufacture of semiconductor devices. However, the concept of a feed forward control mechanism (i.e., obtaining a variable after a first process to modify the operation of a second process) is not new to the field of semiconductor device manufacturing or to manufacturing in general. In fact, it would be safe to argue that "feed forward control mechanisms" have been in existence, in one form or another, since items were first manufactured (i.e., thousands of years ago). Thus, the Examiner has relied on a reference that discloses a well-known concept shared by both Funk and Applicant's invention. Notwithstanding that Funk also identifies two of the claimed processes in isolation (i.e., wet etching and dry etching), as a general matter, "virtually all [inventions] are combinations of old elements."[1]

The Examiner, however, has not disclosed all of the steps that comprise the specific set of claimed steps or the specific order of the claimed steps (i.e., dry etch, acquire variable, calculate wet etch parameters, wet etch). The Examiner has also failed to identify the specific variable (dimension of the film) that is to be acquired and used to determine processing requirements of the wet etching step. Although the Examiner has argued that Funk discloses acquiring "the dimension of the film after wet etching," upon reviewing the Examiner's citations within Funk, Applicant is unable to verify that such a disclosure is made.

In the paragraph spanning pages two and three of the Office Action, the Examiner also asserted:

[1] In re Rouffet, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998) (quoting Environmental Designs, Ltd. v. Union Oil, 713 F.2d 693, 218 USPQ 865 (Fed. Cir. 1993)).

> The instant claim differs from Funk by specifying wet etch after the step of dry etching. However, Funk teaches that a plurality of processing processes may be performed in sequences. The processing processes may include dry etching (plasma etching) and wet etching. Therefore, it would have been obvious to one with ordinary skilled in the art to perform various processes in various sequences (e.g., wet etching after a dry etching as claimed) depending on the specific product requirement.

Applicant would like to specifically focus on the Examiner's assertion that "it would have been obvious to one with ordinary skilled in the art to perform various processes in various sequences ... depending on the specific product requirement." Applicant would posit that if such a motivation was sufficient to establish a prima facie case of obviousness, then nearly every claim directed to semiconductor manufacturing pending before the U.S. Patent Office could safely be rejected on the basis of this motivation, as this motivation would generally apply to any possible semiconductor manufacturing process using known processing steps.

The Federal Circuit, however, has long disapproved of establishing the requisite motivation to modify a particular reference based upon generalities. The Federal Circuit has repeatedly held that in order to establish the requisite motivation, the Examiner must make "clear and particular" factual findings as to a specific understanding or specific technological principle which would have realistically impelled one having ordinary skill in the art to modify a particular prior art reference to arrive at the claimed invention based upon facts, not generalizations.[2] In so doing, the Examiner is burdened to provide facts and explain why one having ordinary skill in the art would have been realistically motivated to modify the methodology disclosed by Funk to arrive at the claimed invention. That burden has not been discharged. Applicant, therefore, respectfully submits that the Examiner has failed to establish a prima facie case of obviousness for failure to establish the requisite realistic motivation to

[2] Ruiz v. A.B. Chance Co., 234 F.3d 654, 57 USPQ2d 1161 (Fed. Cir. 2000); Ecolochem Inc. v. Southern California Edison, Co., 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); In re Kotzab, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000); In re Dembiczak, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999).

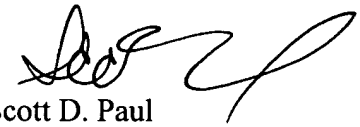
modify a particular reference to obtain a particular benefit. Thus, Applicant solicits the withdrawal of the imposed rejection of claim 6 Under 35 U.S.C. § 103 for Obviousness Based upon Funk.

Applicant has made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicant invites the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. Accordingly, and in view of the foregoing remarks, Applicant hereby respectfully requests reconsideration and prompt allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417, and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY



Scott D. Paul
Registration No. 42,984

600 13th Street, N.W.
Washington, DC 20005-3096
(202) 756-8000 SDP/AJS:kap
Date: October 2, 2003
Facsimile: (202) 756-8087